MEMORANDUM

Date: June 6, 2012

To: Seattle Bicycle Advisory Board

From: Kevin O'Neill, Planning and Urban Design Manager,
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Subject: BMP Task 2.2.2 – Bicycle Network Gap Analysis Methodology

Purpose

As part of developing the State of the Seattle Bicycling Environment Report for the Bicycle Master Plan (BMP) update, SDOT staff and the consultant team will be analyzing work done since the adoption of the current plan. The purpose of this task is to: a) develop a methodology to identify gaps in Seattle's bicycle network based the 2007 BMP recommendations, and b) identify opportunities for updates to the bicycle network based on the City's overall bicycling environment. The results of this task will be used to inform work on identifying gaps in the current network (Task 2.2.3), and subsequent work in developing the updated Bicycle Network Map (Task 5). These gaps will range from spot locations to area-wide improvement opportunities.

Proposed Methodology

This analysis will include several sources of data to identify the status of implementing the current planned bicycle network. Gaps will be identified through examination of GIS data, aerial photography, staff knowledge and field work (if needed). As of the end of 2011, 52% of the network recommended by the original BMP had been completed. The projects that were part of the original network plan, but unfunded and thus not implemented, are identified as gaps. Also, the original BMP included unmarked streets with wide shoulders, streets commonly used by bicyclists or "shared roadways," and streets identified as "further study needed" as part of the network, but for this analysis many of those streets will be identified as gaps in order to promote the development of a more complete network. The proposed methodology will be a three step process:

1) Identify gaps in Seattle's existing bicycle network based on the 2007 Bicycle Master Plan,

2) Identify areas where additional enhancements may be made to the recommended network and,

3) Address the need for development of new types of facility networks that were not addressed by the original plan (i.e., neighborhood greenways, cycle tracks, etc.).

Definitions:

Connector Streets – Streets identified in the 2007 BMP as shared roadways, paved shoulders, or wide outside lanes.

Major Destinations – Universities & Colleges, multi-use trail access point, public schools, and high capacity transit (Light rail, commuter rail, ferry terminals and bus rapid transit (BRT))

Step One – Assessment of the Current Planned Network and Identification of Gaps:

The assessment of the Seattle Bicycle Network will be identified by comparing the existing bicycle inventory to the 2007 BMP recommendations. For this portion of the analysis, gaps will be defined as those recommendations from the 2007 BMP that have not been funded or implemented. The facility types under consideration are: multi-use trails, bike lanes, climbing lanes, sharrows, bicycle boulevards, crossing improvements, signed bicycle routes and bicycle-related traffic signal improvements. Each gap will fall into one of the following types; crossing, network or corridor gap. Additionally, the condition of each facility type will be mapped (where data is available) and the distribution of implementation analyzed.

Types of gaps:

- **Crossing Gaps** – Spot locations that were identified for crossing improvements from the 2007 BMP that have not been implemented.
    - Data Inputs
        - 2007 BMP crossing improvement recommendations
        - Existing crossing improvements from 2007 BMP

- **Network Gaps** – Small gaps in the existing network. Network gaps are no greater than ¼ mile may include; missing connections to major destinations (see definitions), unfunded recommendations from the 2007 BMP.
    - Data Inputs
        - Existing bicycle network including signed bicycle routes
        - Major destinations
        - Choke points (bridges)
        - 2007 BMP planned, unfunded network
        - Public input via survey mapping tool – worst streets for biking and where you would you like to ride that you currently do not

- **Corridor Gaps** – Larger gaps in the existing network greater than ¼ mile from the 2007 BMP facility recommendations.
    - Data Inputs
        - Existing bicycle network
        - Major destinations
        - 2007 BMP planned, unfinished network

- **Condition Gap** – Qualitative analysis of the pavement and marking condition of existing bicycle facilities and their geographic distribution.
    - Data Inputs
        - Conditional assessment of bicycle facility pavement
        - Conditional assessment of markings related to bicycle facilities
        - Pavement condition rating (from Street Maintenance Division)

Step Two - Additional Opportunities for System Evolution:

This step in the assessment will focus on locations that were not part of original BMP or were identified as connector streets (see definitions) therein. Similar to the first step, this process will identify opportunities for enhancement to the bicycle network by their location and size through a data-driven process.

Types of Opportunities:

- **Crossing Opportunities** –Locations where existing bicycle lanes drop approaching an intersection, through the intersection or at certain driveways. Unmarked multi-use trail and roadway intersection, and existing signals without bicycle actuation on arterials with bike lanes will be considered as well.

- **Corridor Opportunities** – Gaps in the existing network greater than ¼ mile from the 2007 BMP facility recommendations.
    - Data Inputs
        - Major destinations
        - 2007 BMP connector streets (see definitions)
        - 2007 BMP "further study needed" recommendations
        - Public Input via Survey Map – Worst streets for biking, where you would you like to ride that you currently do not

- **Area Opportunities** – Large areas devoid of existing and/or planned facilities.

- **Equitable Implementation Analysis** – Review of the distribution of existing and planned bicycle improvements since 2007 as it relates to traditionally underserved populations.
    - Data Inputs
        - Existing bicycle network
        - 2007 planned bicycle network
        - Bike rack inventory
        - 2010 Census Tract by
            - Minority population (2010 Census)
            - Low car ownership (5-year (2006-2010) American Community Survey (ACS) estimates)
            - Low income (5-year (2006-2010) ACS estimates)
            - Youth (1-18) (2010 Census)

- Aged (65+) (2010 Census)

Step Three – System Opportunities:

Since development of the original 2007 BMP, new bicycle facilities types (for example, neighborhood greenways and cycle tracks) have been implemented successfully in other cities and have been advocated for implementation in Seattle. Because they were not part of the original plan, they do not fit into the definition of a "gap" for this specific task, but are considered to be missing elements to the network, and will be incorporated in the plan update.

The process to development of these new facility types and corresponding network enhancements will take in several different tasks in the update to the BMP including: the existing conditions analysis (Task 2), which will incorporate several Best Practices white papers; the policy update work (Task 3); the high priority areas analysis (Task 4), and updated bicycle network development (Task 5).